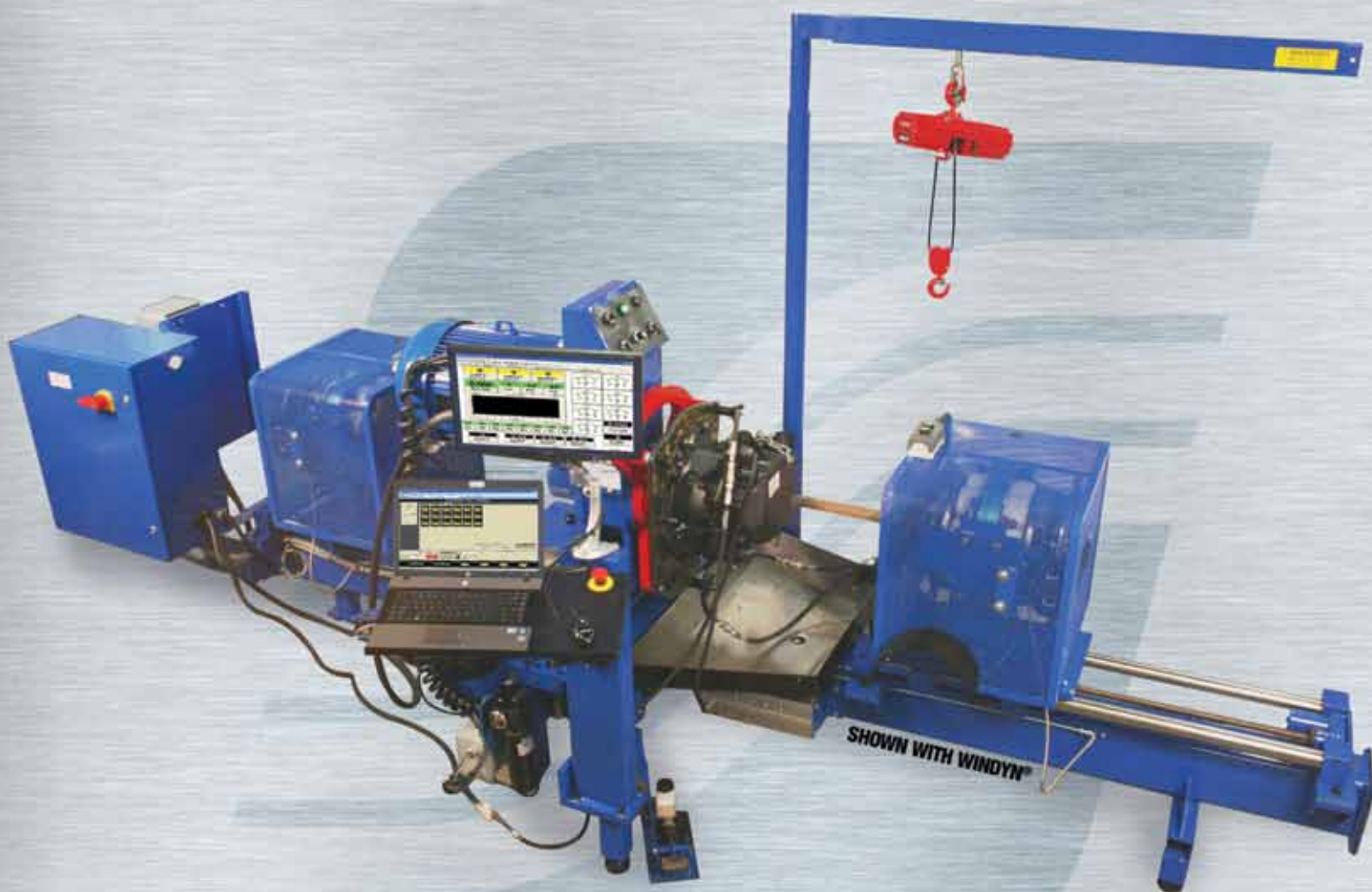


# AXILINE 97000

BY SUPERFLOW

TRANSMISSION DYNAMOMETER



WWW.SUPERFLOW.COM

1888.442.5546

AXILINE

• DTS

• HICKLIN

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## OVER 50 YEARS OF EXCELLENCE

What started with the DynaDrome, by Delta Dynamics, circa 1958 has evolved into the most respected brand in light and medium duty transmission testing today: Axiline®, from SuperFlow®. Axiline's® roots date to the industries beginnings, and we are still here today because of one thing, focus. From the engine to the transmission, from the driveshaft to the axles, and throughout the entire drive train rebuilding and testing process we never lose sight of our commitment to improve the bottom line of our customers. This allows us to continually offer the latest, most efficient transmission testing products in

the industry. It also doesn't hurt to back these products with the most respected customer service department in the industry. We strive to find innovative methods to increase customer capabilities and pioneer new technologies. Today, with more than 20 U.S. and foreign patents registered, SuperFlow® is still leading the way in the art and science of transmission testing and rebuilding. From start to finish no other company can provide a turn-key solution backed by more than 50 years of transmission testing excellence.

## WORLDWIDE RECOGNITION

The SuperFlow® brands of transmission test equipment (Axiline® & Hicklin®) are installed at over 1000 customer sites in 52 countries around the world. Our customers know that our track record of excellence and our broad knowledge of transmission testing is evidenced by our expertise and skill in delivering world class test equipment. We've designed machines for the US Military and leading automotive manufacturers to ensure that the transmissions they manufacture or rebuild meet their exacting standards.

Our experience over the last 50 years has granted us the opportunity to work closely with the most respected companies in the transmission business to develop a line of products that deliver unmatched results. From handheld diagnostic testers and shifters to full blown transmission dynamometers with advanced data acquisition systems, SuperFlow® has the products you need to get the job done. Come see why thousands of companies worldwide have already chosen SuperFlow® for all of their transmission testing needs.

## SUPERFLOW'S MANY INDUSTRY FIRSTS

### WE WERE THE FIRST

To use electric drives on transmission dynos

### WE WERE THE FIRST

To install eddy current load units on transmission dynos

### WE WERE THE FIRST

With data acquisition and control

### WE WERE THE FIRST

to introduce a valve body tester and solenoid tester in one unit: The Axiline® VBT 8000



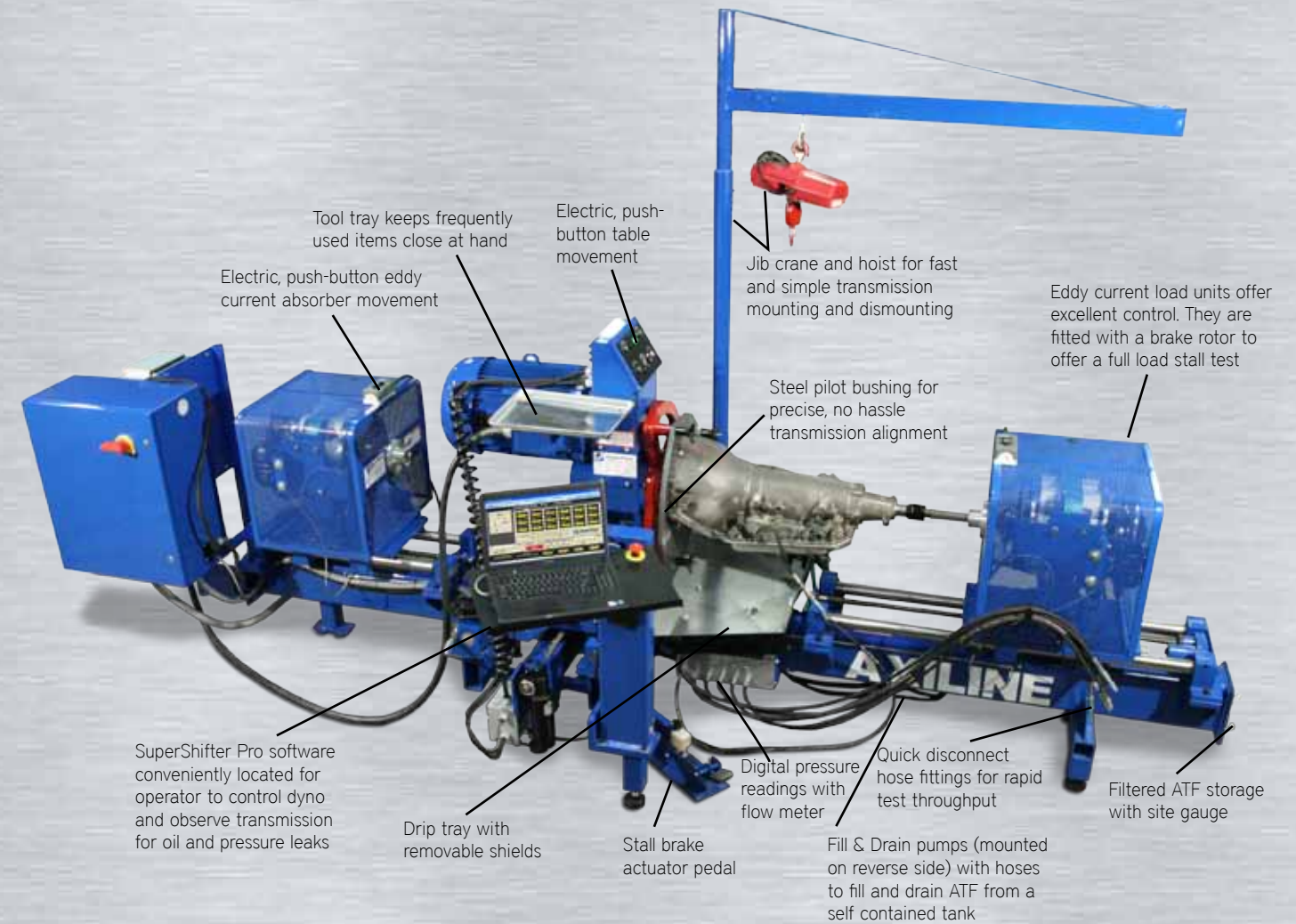
## AXILINE® 97000: STANDARD FEATURES

- High-output, electric-drive, 40 horsepower motor with advanced control strategies to accurately mimic transmission inputs from internal combustion engines
- Eddy current power absorption units for dynamic loaded testing to simulate real world driving conditions
- Electric, push-button eddy current absorber movement
- SuperShifter Pro® Software
- Jib crane & hoist for fast and simple transmission mounting and dismounting (holds up to 350 lbs.)
- Drip trays with removable shield
- Fill & drain pumps with hoses to fill and drain filtered ATF from the 97000'S self contained tank
- Electric shuttle motors to easily position absorbers and motor for different transmission configurations
- Complete tooling required for testing
- Steel pilot bushings for precise, no hassle transmission alignment
- Quick disconnect hose fittings for rapid test throughput

## DIGITAL FOR EASE & ACCURACY

The Axiline® 97000 features full digital control for highly accurate and repeatable testing. It adapts to most all domestic and foreign front-wheel-drive, rear-wheel-drive, transverse, manual, and CVT transmissions. The 97000 tests transmission line pressure, shift point and response, downshift and converter lockup, stall speed and more - all under simulated vehicle load conditions. The standard SuperShifter Pro® software system gives the operator full digital control of both the dyno and the transmission

from a simple laptop computer. The laptop is conveniently mounted on a movable tray so the operator can spot oil and pressure leaks, check hydraulic and system controls, and make minor adjustments while the transmission is mounted on the tester. The 97000 can be upgraded with a WinDyn® Data Acquisition system for instances when data must be stored and reviewed during post test analysis.



## VERSATILE & UPGRADABLE

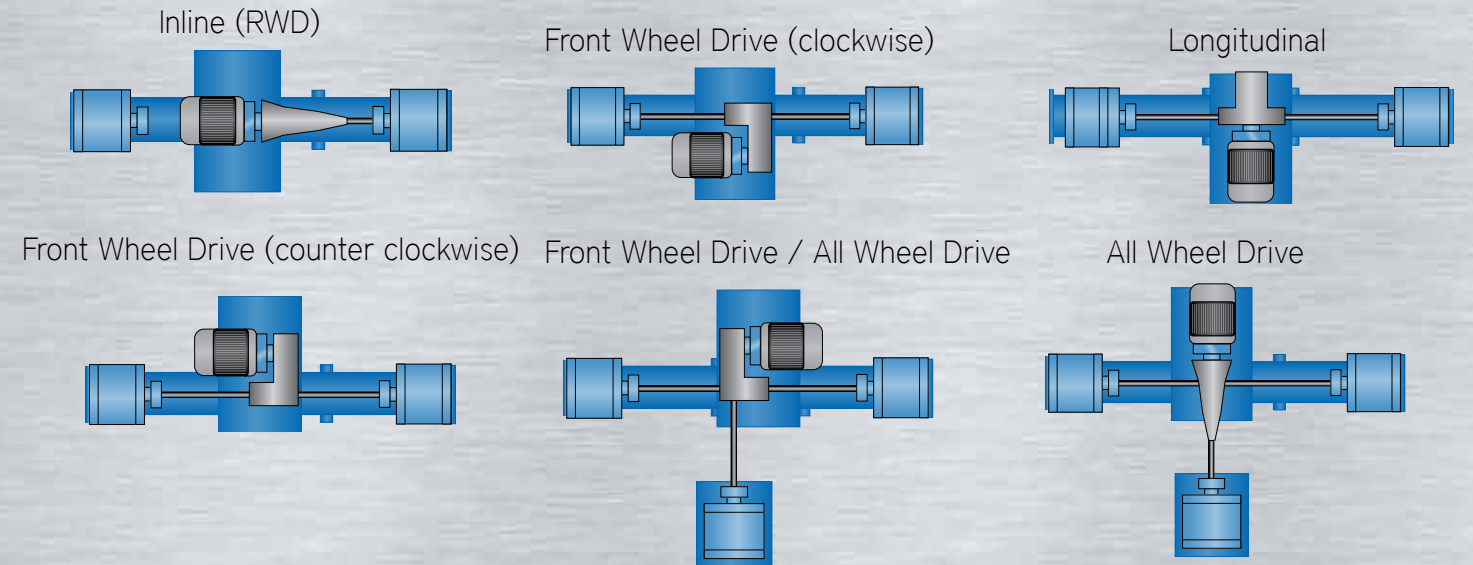
The 97000 features a state-of-the-art design that allows owners to easily upgrade as testing needs change. The dyno comes standard with the ability to test most all domestic and foreign front and rear-wheel-drive transmissions. All-Wheel-Drive capabilities also available at any time.



## USING THE 97000 YOU CAN TEST

- ☞ All gears - planetary, sun, etc
- ☞ Noise - mechanical hydrosonic
- ☞ Hot & cold testing
- ☞ All available pressure ports
- ☞ Shift points
- ☞ Front pump capacity - flow pressure
- ☞ Leaks - internal, external
- ☞ Stall speed - forward, reverse
- ☞ Throttle valve pressure
- ☞ Automatic & manual upshift, downshift
- ☞ Vacuum pressure modulator
- ☞ Solenoid functions
- ☞ Converter - lockup and non-lockup types
- ☞ Output & internal loading
- ☞ RPM test - left and right outputs
- ☞ Converter and cooling line temperature
- ☞ Flow metering of cooler line temp
- ☞ Hydraulic function of the governor, clutch, valve body and overdrive
- ☞ Kick down
- ☞ And more

## OPTIONAL CONFIGURATIONS



## SPECIFICATIONS

### POWER REQUIREMENTS

220/240 V 3-phase, 50-60 Hz or 460/480 V, 50-60 Hz & 110/120V Single Phase (380 V available upon request)

### AIR REQUIREMENTS

1/2" lines (12.8 mm), 100 psi (689.5 kPa) minimum

### WEIGHT

4,000 lbs. (1,814 kg)

### DIMENSIONS

75 in. x 178 in. x 98 in. (191 cm x 452 cm x 248 cm) \*includes jib crane

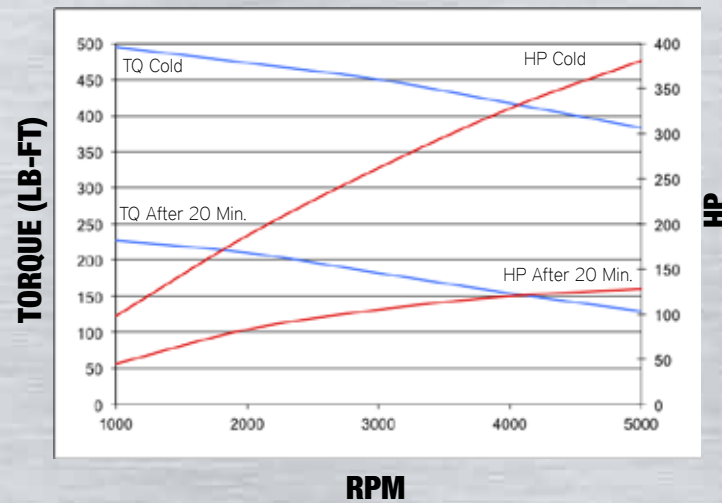
### INPUT DRIVE (PRIME MOVER)

<b>TYPE</b>	Direct-drive AC motor
<b>POWER</b>	40 HP (30 kW)
<b>CONSTANT POWER</b>	1,750 to 3,600 RPM
<b>CONSTANT TORQUE</b>	0 to 1,750 RPM
<b>MAXIMUM SPEED</b>	3,600 RPM

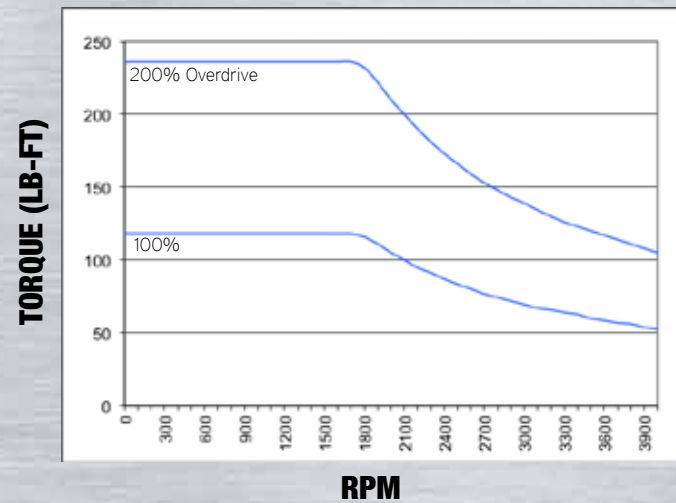
### EDDY CURRENT POWER ABSORBER

<b>TYPE</b>	Air Cooled, bidirectional
<b>MODEL</b>	K70
<b>INERTIA</b>	23.3 lb-ft <sup>2</sup> (.98 kgm <sup>2</sup> )
<b>MAXIMUM SPEED</b>	5,500 RPM
<b>PEAK TORQUE</b>	1,000 RPM, Cold: 495 lb-ft (671 N-m) 1,000 RPM, Hot: 227 lb-ft (308 N-m) 5,000 RPM, Cold: 385 lb-ft (522 N-m) 5,000 RPM, Hot: 129 lb-ft (175 N-m)

**EDDY CURRENT ABSORBER**



**INPUT DRIVE ELECTRIC MOTOR**



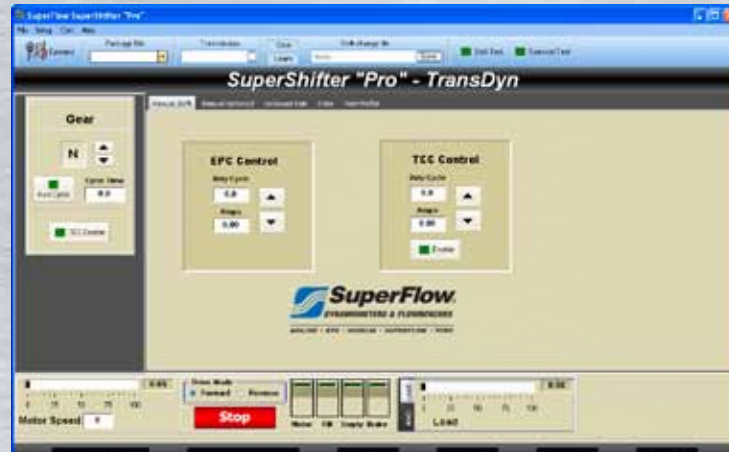
## SUPERSHIFTER PRO® SOFTWARE (STANDARD)

SuperShifter Pro® is the most advanced and user friendly shift module we have ever offered. This easy-to-use Windows® based software system puts both the dyno and transmission controls right at your fingertips plus it gives you access to a whole host of features that make testing easier, quicker and more profitable. It was designed for

extreme versatility so it works with transmission dynamometers, valve body testers and solenoid testers; an advantage that means your technicians only need to learn one software platform to run all SuperFlow® transmission test products.



Data Screen



Manual Shift Screen



Manual Solenoid Control Screen



Solenoid Test Screen

## SUPERSHIFTER PRO® FEATURES

- ✔ Precise control of input speed and output load
- ✔ Individual control of up to 12 solenoids
- ✔ Tests most modern late-model transmissions
- ✔ Transmission lookup tool that searches by make and model
- ✔ Built-in solenoid current & resistance tests
- ✔ Real-time digital displays for:
  - PRNDL
  - RPM
  - pressure switches (when available)
  - TOT (when equipped)
  - gear ratio
  - machine pressure
- ✔ Continuously monitors all critical parameters
- ✔ Modulated duty cycle and frequency range
- ✔ Edits shift files for customized testing
- ✔ Computer controlled
- ✔ Learn and save mode to expedite solenoid testing
- ✔ Auto Shift (time delay)
- ✔ PWM programming screen with delay
- ✔ Hot & cold solenoid pass/fail testing
- ✔ Eddy current load unit control
- ✔ Pump and machine on/off control
- ✔ Motor direction control
- ✔ PID loop enabled flow rate
- ✔ Continuing software updates
- ✔ Current measurement at 16-bit resolution



## WINDYN® DATA ACQUISITION (OPTIONAL SOFTWARE)

WinDyn® is a complete Data Acquisition System available for all SuperFlow® Transmission Dynamometers.

Upgrading the 97000 to WinDyn® provides 76 channels of data acquisition for inputs like pressure and temperature, as well as, 35 channels for calculations, interpolation tables and memory. WinDyn® runs on desktop or laptop computers running Microsoft Windows® operating systems and it communicates with the dynamometer via an Ethernet connection.



## WINDYN® FEATURES & CAPABILITIES

- ☞ Custom, user-defined screens
- ☞ Custom, user-defined tests
- ☞ Real-time data viewing
- ☞ Playback mode
- ☞ Full graphing capabilities (bar, X-Y & strip charts)
- ☞ Graph overlays for multiple test comparison
- ☞ 12 solenoid control channels
- ☞ 8 high speed 0-10V DC analog inputs
- ☞ 4 high speed 0-10V DC analog outputs
- ☞ 4 thermocouple inputs (type k)
- ☞ 4 thermistor inputs (for items like transmission oil temperature)
- ☞ 4 frequency inputs (configurable for mag pick-up or TTL)
- ☞ 16 digital inputs
- ☞ 16 digital outputs
- ☞ 2 load cell inputs
- ☞ 1 USB port for device
- ☞ 1 USB port for host
- ☞ Ethernet for WinDyn® 10/100 mHz
- ☞ Network ready
- ☞ 3 RS232 Serial com ports
- ☞ Current measurement at 16-bit resolution

### OPTIONAL

- ☞ 16 pressure inputs
- ☞ 16 0-10V DC inputs
- ☞ 1 load cell input
- ☞ 12 relay outputs
- ☞ 2 PWM outputs

## OPTIONAL EQUIPMENT

### AUTO STALL

The eddy current brakes on the 97000 are outfitted with hydraulic disc brakes to test stall speed. Auto Stall automates this process by replacing the foot operated stall pedal with an electronic actuator.

### AWD LOAD UNIT

The AWD Third Load Unit equips the 97000 to test most AWD transmissions. The floor mounted unit is equipped with an eddy current absorber and an operator interface with load percentage adjustment, digital RPM display, load power on/off switch and emergency stop. With a separate potentiometer, it can also set the same load percentage or be modified to check the differential. An adjustable side-to-side and up/down table shuttle moves 10" (25cm) side-to-side from center and 3 1/2" (8.9 cm) up/down from center.

### OUTPUT TORQUE

Optional load cell to measure static or dynamic torque.

### AUTO SHIFT

This linear shift actuator controls the manual detent position of the transmission. Since it uses a cable, Auto Shift can connect to most every transmission. It can also be fitted with torque measurement, up to 50 lb-ft.

### INLINE COOLER

The inline oil cooler connects to the transmission cooler lines to maintain proper oil temperature during extended test sequences. It is ideal for long test sequences or endurance testing.

### INPUT TORQUE

This custom input shaft is instrumented with a torque transducer to measure torque directly before the converter for highly accurate readings. 60 pulse per revolution encoder. 450 lb-ft rating.

### ADAPTER PLATES

Choice of 15 precision alignment adapter packages

More options available, call 1.888.442.5546 for more info.

# SUPERFLOW® DYNAMOMETERS & FLOWBENCHES

## AXILINE® 97000 TRANSMISSION DYNAMOMETER

SuperFlow® is a global market leader specializing in high-performance automotive testing and rebuilding equipment. Since the early 1970's SuperFlow® products have been used daily by professional engine builders, the military, technical schools, professional race teams, speed shops, transmission rebuilders, universities, and leading automotive manufacturers to produce powerful

and efficient vehicles. Our commitment to providing the best products and service at a great value has given us the opportunity to work with some of the most notable companies in the automotive industry. Come see why thousands of businesses have already chosen SuperFlow® for all of their testing needs.

CALL 1.888.442.5546 for more information on the Axiline® 97000 Transmission Dynamometer.

Or visit us at [superflow.com](http://superflow.com)



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## THE ONLY SOURCE FOR ALL YOUR TESTING NEEDS

- Chassis Dynos
- Flowbenches
- DriveShaft Rebuilding Equipment
- Engine Dynos
- Solenoid Testers
- Torque Converter Rebuilding Systems
- Transmission Dynos
- Valve Body Testers
- Transmission Testers

Manufactured in Colorado Springs, CO and Des Moines, IA U.S.A. Offices Worldwide; Des Moines, IA, Colorado Springs, CO, Pulle, Belgium  
For Europe sales & service please call +32-3-4846511 or email [info@superflow.be](mailto:info@superflow.be)  
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